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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/678,068	SEO, KWANG-DEOK	
	Examiner	Art Unit	
	JASMINE STOKELY-COLLINS	2423	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 February 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-29,33 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-29, 33-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed on 2/9/2009 have been fully considered but they are not persuasive.

On page 8 of applicant's arguments, applicant argues that the cited references, specifically Wee, do not teach performing a conversion from a P frame to an I-frame until the next P-frame is the random access point. The examiner disagrees; Wee teaches a method of manipulating and editing a temporal order of an image (manipulating the play order of at least one image frame relative to another, see col. 6 ll. 8-15). Randomly accessing points in a video qualifies as such because the user is accessing images in a different order than they would otherwise be played. If the target frame (see col. 11 ll. 35-54; in this case, the target frame is P7) is not an I-frame, the routine follows the dependencies until it determines the closest I-frame (I1) which the target frame either directly or indirectly (i.e. frame P7 depends on frame P4, which depends on frame I1) depends on. The routine converts any P-frames in the line of dependency to I-frames until the target frame is ultimately converted to an I-frame ("For example, if a frame P7 which is to be transcoded is discovered to depend on frame P4 which in turn depends on frame I1, a nested transcoding subroutine is then called using frame P4 as the current frame and frame I1 as the reference frame, to convert frame P4 to independent frame I4. This process, indicated by a function block 251 of FIG. 6, is performed in as many nested loops

as necessary to yield an I frame as reference frame for use with the P frame 241. In the hypothetical involving frames P7, P4 and I1, a dominant subroutine of the editor uses frame P7 as the current frame and frame I4 as the anchor frame, **to yield frame I7**."). Wee's frame conversion does occur until the target frame (P7) is converted into an I-frame (I7).

Applicant further argues that the applied references do not teach determining an existing I-frame that is most similar to the random access point. The examiner disagrees; Although Lin does not explicitly teach determining the existing I-frame that is most similar, one of ordinary skill in the art would recognize that the I-frame closest in proximity is generally the I-frame that is most similar. The closest I-frame would be the I-frame that the P-frame is dependant upon. The fact that the target P-frame is dependent upon that I-frame, as opposed to other I-frames, implies the closest I-frame is the most similar. Wee further illustrates that relationship (of dependency) in the example cited above.

Applicant further argues that the applied references do not teach or suggest configuring a media data sample having the new I-frame as the data transmission starting point, configuring a new data stream using the media data sample and continuous media data samples, and changing a first header information of the new data stream in combination with transmitting the new data stream including the changed first header information from the transmitting server to the remote. The examiner disagrees; The combined teachings of Lin and Wee suggest configuring a media data sample having the new I-frame as the

data transmission starting point, configuring a new data stream using the media data sample and continuous media data samples. Lin teaches transmitting a reference frame with the least cost when random access is requested (col. 8 ll. 2-6). Costs can be calculated based on "distances from the possible reference frames to the next requested frame" and/or "the numbers of bits required for decoding the next requested frame" (the sum of the bit-rates of those frames to be transmitted) (col. 6 ll. 23-30). When combined with Wee's teaching of converting P-frames and B-frames into I-frames (col. 11 ll. 35-54 and col. 12 ll. 8-24), all of which can be done prior to transmission to the receiving unit (see fig. 3), the frame with the least cost would be a converted I-frame. Therefore, Lin's in view of Wee teaches transmitting the newly created I-frame (configuring a media data sample having the new I-frame as the data transmission starting point). Lin also teaches continuing with forward-play after accessing the requested random access frames (col. 7 ll. 65-col. 8 ll. 18) (configuring a new data stream using the media data sample and continuous media data samples).

In regards to limitation *changing a first header information of the new data stream in combination with transmitting the new data stream including the changed first header information from the transmitting server to the remote unit*, the previously cited portion Aksu teaches meta-data including sample type and size. In the case where a frame format is changed, this information must change; For example, the size of an I-frame is larger than that of a P-frame or B-frame, and therefore the size field would change. This "sample-specific meta-

data" can appear at the beginning of a file (pg. 8 ll. 19-32). The header is transmitted along with the stream.

Independent claims 22 and 33 contain similar limitations, and claim 33 is rejected for the reasons expressed in regards to the limitations of claim 22 stated above.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 22-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Agarwal et al (US 6,314,466) in view of Lin et al (US 6,738,980) in further view of Wee et al (US 6,104,441) in even further view of Aksu et al (WO 03/028293).

Claim 22:

Agarwal discloses a video streaming method comprising:

receiving a random access request (request for transmission of a multimedia object at a user selected segment, also see "random access" in the title)) from a remote unit (client computer 112) by a transmitting server (streaming media server 110) (see col. 8 11.41- 56);

searching a random access point in a content file stored in the transmitting server

(the streaming media server accesses the multimedia data object at the user specified segment, the act of accessing the multimedia data object at the user specified segment inherently implies that the multimedia data object was searched) in response to the transmitting server receiving the random access request (in response to the request by the client computer 112) (see col. 8 11.41-56);

Agarwal doesn't disclose "reconfiguring a data stream according to a screen type of the random access point and a coincidence between the random access point and a data transmission starting point, wherein reconfiguring the data stream comprises:

determining an existing I-frame most similar to the random access point when the random access point is determined to be a P-frame and is the data transmission starting point,

converting the P-frame into a new I-frame based on values of the existing I-frame and a next P-frame, performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a new I-frame, configuring the media data sample having the new I-frame as the data transmission starting point,

configuring the new data stream using the media data sample and the continuous media data samples, and

changing a first header information of the new data stream; and transmitting the

new data stream including the changed first header information from the transmitting server to the remote unit."

Lin, an inventor from the same or a similar field, discloses that if a random access point selected by the user is an I frame, the starting point of the stream is that I frame (see col. 2 ll. 19-22). however, if the random access point selected is a P-frame, the system must adjust the starting point of the stream to the most recent I frame and transmit the most recent I frame with all the p frames leading to the requested random access p frame (see col. 4 ll. 24-32) The coincidence between the random access point and a data transmission starting point is that if the requested random access point is an I frame, the data transmission starting point is that I frame, however if the random access point is a p frame, then the data transmission starting point will be the closest I-frame. Although Lin does not explicitly teach determining the existing I-frame that is most similar, one of ordinary skill in the art would recognize that the I-frame closest in proximity is generally the I-frame that is most similar. The closest I-frame would be the I-frame that the P-frame is dependant upon. The fact that the target P-frame is dependent upon that I-frame, as opposed to other I-frames, implies the closest I-frame is the most similar because it has the strongest dependency. The disclosure by Lin reads on "reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point" and "determining an existing I-frame most similar to the random access point when the random

access point is determined to be a P-frame and is the data transmission starting point" (by determining the I-frame the random access point is dependant upon).

Lin also discloses that when either the random access I frame or the closest I frame is sent (depending on the screen type of the random access point chosen by the user), the rest of the frames in the stream are sent as well (see Fig. 6B, where a random access point 22 in the forward stream was chosen. Frame 22 in the forward stream is a p- frame. The closest I frame was searched and found to be I frame 21 in the reverse stream. I frame 21 and the rest of the following frames (frames 22, 23, 24, etc...) in the forward stream were sent to the user), this disclosure by Lin reads on "configuring the new data stream using the media data sample and the continuous data samples", where the media data sample is the closest I frame, I frame 21 in the reverse stream, and the continuous data samples are the rest of the frames in the forward stream. Had only the forward stream been available at the server, the closest I frame, I frame 14 in the forward stream and the rest of the frames leading to frame 22 would have been sent along with the rest of the frames following random access frame 22 in the content file. This new stream is transmitted to the user (see supporting text col. 8 ll. 59- col. 9 ll. 15). It would have been obvious to one of ordinary skill at the time the invention was made to modify the method of "receiving a random access request from a remote unit by a transmitting server; searching a random access point in a content file stored in the transmitting server in response to the transmitting server receiving the random access request" of Agarwal with the

method of "reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point", "searching an existing I- frame closest to the random access point when the random access point is determined to be a P-frame and is the data transmission starting point", "configuring the media data sample having an I-frame as the data transmission starting point", and "configuring the new data stream using the media data sample and the continuous data samples of Lin because it would have enabled the user to implement VCR functionality of compressed video streams while minimizing extra network traffic and video decoder complexity, as disclosed by Lin (see col. 2 ll. 32-37).

Neither Agarwal or Lin disclose "configuring the media data sample having the new I-frame as the data transmission starting point" and "converting the P-frame into a new I-frame by calculating values of the existing I-frame and a next P-frame, repeatedly performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a final new I- frame" or "changing a first header information of the new data stream".

Wee teaches a method of manipulating and editing a temporal order of an image (manipulating the play order of at least one image frame relative to another, see col. 6 ll. 8-15). Randomly accessing points in a video qualifies as such because the user is accessing images in a different order than they would otherwise be played. If the target frame (see col. 11 ll. 35-54; in this case, the

target frame is P7) is not an I-frame, the routine follows the dependencies until it determines the closest I-frame (I1) which the target frame either directly or indirectly (i.e. frame P7 depends on frame P4, which depends on frame I1) depends on. The routine converts any P-frames in the line of dependency to I-frames until the target frame is ultimately converted to an I-frame ("For example, if a frame P7 which is to be transcoded is discovered to depend on frame P4 which in turn depends on frame I1, a nested transcoding subroutine is then called using frame P4 as the current frame and frame I1 as the reference frame, to convert frame P4 to independent frame I4. This process, indicated by a function block 251 of FIG. 6, is performed in as many nested loops as necessary to yield an I frame as reference frame for use with the P frame 241. In the hypothetical involving frames P7, P4 and I1, a dominant subroutine of the editor uses frame P7 as the current frame and frame I4 as the anchor frame, **to yield frame I7**."). Wee's frame conversion does occur until the target frame (P7) is converted into an I-frame (I7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of "receiving a random access request from a remote unit by a transmitting server; searching a random access point in a content file stored in the transmitting server in response to the transmitting server receiving the random access request; reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point", "searching an existing I-frame closest to the random access point when

the random access point is determined to be a P-frame and is the data transmission starting point", and "configuring the media data sample having an I-frame as the data transmission starting point" of Agarwal and Lin with the method of "converting the P-frame into a new I-frame by calculating values of the existing I-frame and a next P-frame, performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a final new I- frame" of Wee for the benefit of gaining access to individual frames in fast-forward, rewind, editing, or splicing operations, thereby enhancing the viewers experience.

Further, the combined teachings of Lin and Wee suggest “configuring a media data sample having the new I-frame as the data transmission starting point”. Lin teaches transmitting a reference frame with the least cost when random access is requested (col. 8 ll. 2-6). Costs can be calculated based on “distances from the possible reference frames to the next requested frame” and/or “the numbers of bits required for decoding the next requested frame” (the sum of the bit-rates of those frames to be transmitted) (col. 6 ll. 23-30). When combined with Wee’s teaching of converting P-frames and B-frames into I-frames (col. 11 ll. 35-54 and col. 12 ll. 8-24), all of which can be done prior to transmission to the receiving unit (see fig. 3), the frame with the least cost would be a converted I-frame. Therefore, Lin's in view of Wee teaches transmitting the newly created I-frame (configuring a media data sample having the new I-frame as the data transmission starting point). Lin also teaches continuing with

forward-play after accessing the requested random access frames (col. 7 ll. 65-col. 8 ll. 18) (configuring a new data stream using the media data sample and continuous media data samples).

Neither Agarwal nor Lin nor Wee disclose "changing a first header information of the new data stream" and “transmitting the new data stream including the first header information from the transmitting server to the remote unit.

Aksu, an inventor from the same or a similar field teaches meta-data including sample type and size. In the case where a frame format is changed, this information must change; For example, the size of an I-frame is larger than that of a P-frame or B-frame, and therefore the size field would change. This “sample-specific meta-data” can appear at the beginning of a file (i.e. as a header) (pg. 8 ll. 19-32). The header is transmitted along with the stream. It would have been obvious to one of ordinary skill in the at the time the invention was made to modify the method of "receiving a random access request from a remote unit by a transmitting server; searching a random access point in a content file stored in the transmitting server in response to the transmitting server receiving the random access request", "reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point", "searching an existing I-frame closest to the random access point when the random access point is determined to be a P-frame and is the data transmission

starting point", "converting the P-frame into a new I-frame by calculating values of the existing I-frame and a next P-frame, repeatedly performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a final new I-frame", "configuring the media data sample having the final new I-frame as the data transmission starting point", "configuring the new data stream using the media data sample and the continuous data samples", and "transmitting the new data stream to the remote unit" of Agarwal, Lin, and Wee with the method of "changing a first header information of the new data stream" of Aksu because the fragmentation of a movie file shortens the length of time that a user has to wait before starting to view the streamed media as opposed to a non fragmented MP4 file (see Aksu p.3 l1.11-22 and p.4 11.18-34).

Claim 23:

Agarwal, Lin, and Wee disclose the method of claim 22 as discussed previously. Lin discloses that the streaming media file consists of an MPEG file. However, neither Agarwal nor Lin nor Wee disclose "an MF4 file applied by a file fragmentation process, and the data stream includes a plurality of media data samples and a plurality of headers of the respective media data samples."

Aksu, an inventor from the same or a similar field, discloses that the mp4 file form comprises a plurality of data segments, a representative header associated with a first of a plurality of data segments; and a plurality of segment

headers, each associated with remaining ones of the plurality of data segments (see Fig. 5a and page 8 lines 28- 29; Aksu discloses that meta-data (moov in a non fragmented file or moov and moof in a fragmented mp4 file) typically appears at the beginning of streaming files as a file header section. Figure 5a shows a representative header labeled "File-level meta-data description part" which is only associated with a first of a plurality of data segments as shown in the figure and a plurality of segment headers labeled "meta data x" where x is the segment number). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of streaming a content file of Agarwal, Lin, and Wee with the method "wherein the content file in the transmitting server is an MP4 file applied by a file fragmentation process, and the data stream includes a plurality of media data samples and a plurality of headers of the respective media data samples" of Aksu because the fragmentation of a movie file shortens the length of time that a user has to wait before starting to view the streamed media as opposed to a non fragmented MP4 file (see Aksu p.3 I1.11-22 and p.4 11.18-34).

Claim 24:

Aksu discloses a representative header including common meta information of the respective media data samples and time information of a first media data sample; and at least one segment header including time information of the respective media data samples except the first media data sample (see

Fig. 5a, Page 8 line 34-page 9 line 11 and Annex 1; Aksu discloses a representative header including common meta information of the respective media data samples ("file-level metadata description part") and at least one segment header including time information of the respective media data samples except the first media data sample (segment "Meta-data" x). Annex 1 provides a list of modified MP4 atoms (structured meta data). Time information is disclosed in Edit List Atom and Sample Table Atom).

Claim 25:

Please see the rejection of claim 22 where it is shown that Lin discloses that the screen type comprises one of an I frame and a P frame.

Claim 26:

Agarwal, Lin, and Wee disclose the method of claim 22 as discussed previously.

Lin discloses "determining whether the random access point is an I-frame or a P-frame; configuring the media data sample having the random access point as the data transmission starting point when the random access point is determined to be the I- frame; configuring a new data stream using the media data sample and continuous media data samples" (please see the rejection of claim 22).

Neither Agarwal nor Lin nor Wee disclose changing header information of a first media data sample segment when the random access point is an I-frame. Aksu, an inventor from the same or a similar field teaches meta-data including sample type and size. In the case where a frame format is changed, this information must change; For example, the size of an I-frame is larger than that of a P-frame or B-frame, and therefore the size field would change. This “sample-specific meta-data” can appear at the beginning of a file (i.e. as a header) (pg. 8 ll. 19-32). It would have been obvious to one of ordinary skill in the at the time the invention was made to modify the method of ""determining whether the random access point is an I- frame or a P-frame; configuring the media data sample having the random access point as the data transmission starting point when the random access point is determined to be the I-frame; configuring a new data stream using the media data sample and continuous media data samples" of Agarwal, Lin, and Wee with the method of "changing header information of a first media data sample segment" of Aksu because the fragmentation of a movie file shortens the length of time that a user has to wait before starting to view the streamed media as opposed to a non fragmented MP4 file (see Aksu p.3 I1.11-22 and p.4 11.18-34).

Claim 27:

Please see the rejection of claim 22. Lin discloses setting an I-frame closest to the P- frame as the data transmission starting point, when the random access point is determined to be a P-frame.

Claim 28:

Aksu discloses MP4 file fragmentation in Fig. 5a where a File-level meta-data description part which appears at the beginning of streaming files as a header section must be received before any video is played back (see p. 5 ll. 8-11 and p 5 ll. 36-p. 6 l1.1). This file-level meta-data contains information that is common for the media data samples (see p. 5 ll. 8-11). In random access play this file must be received in the header of the new data stream before any playback can begin. Therefore, the header information of the media data sample must be changed for proper playback.

Claim 29:

Agarwal, Lin, and Wee disclose the method of claim 22 as discussed previously.

Lin discloses "determining an I-frame closest to the random access point when the random access point is determined to be a P-frame and the random access point is not set as the data transmission starting point (but the closest I frame is set as the data transmission starting point; configuring the media data sample having the (closest) I frame as the data transmission starting point;

configuring a new data stream using the media data sample and continuous media data samples" (please see the rejection of claim 22).

Neither Agarwal nor Lin nor Wee disclose "changing a first header information of the new data stream".

Aksu, an inventor from the same or a similar field discloses MP4 file fragmentation in Fig. 5a where a File-level meta-data description part which appears at the beginning of streaming files as a header section must be received before any video is played back (see p. 5 ll. 8-11 and p 5 ll. 36-p. 6 l1.1). This file-level meta-data contains information that is common for the media data samples (see p. 5 ll. 8-11). In random access play this file must be received in the header of the new data stream before any playback can begin. Therefore, the header information of the media data sample must be changed for proper playback. It would have been obvious to one of ordinary skill in the at the time the invention was made to modify the method of "searching an I-frame closest to the random access point when the random access point is determined to be a P-frame and the random access point is not set as the data transmission starting point (but the closest I frame is set as the data transmission starting point; configuring the media data sample having the (closest) I frame as the data transmission starting point; configuring a new data stream using the media data sample and continuous media data samples" of Agarwal, Lin, and Wee with the method of "changing header information of a first media data sample segment" of Aksu because the fragmentation of a movie file shortens the length of time that a

user has to wait before starting to view the streamed media as opposed to a non fragmented MP4 file (see Aksu p.3 I1.11-22 and p.4 11.18-34).

10. Claims 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lin in view of Wee in further view of Aksu.

Claim 33:

Lin discloses if a random access point selected by the user is an I frame, the starting point of the stream is that I frame (see col. 2 II. 19-22), however, if the random access point selected is a P-frame, the system must adjust the starting point of the stream to the most recent I frame and transmit the most recent I frame with all the p frames leading to the requested random access p frame (see col. 4 II. 24-32) which reads on "determining an I- frame that is most similar to a P-frame random access point requested by a user" and configuring a media data sample by setting an I-frame as a data transmission starting point. Although Lin does not explicitly teach determining the existing I-frame that is most similar, one of ordinary skill in the art would recognize that the I-frame closest in proximity is generally the I-frame that is most similar. The closest I-frame would be the I-frame that the P-frame is dependant upon. The fact that the target P-frame is dependent upon that I-frame, as opposed to other I-frames, implies the closest I-frame is the most similar because it has the strongest dependency.

Lin doesn't disclose "converting a next P-frame that is adjacent to the I-frame into a new I-frame by calculating using the next P-frame and the I-frame; and changing header information of the media data sample."

Wee teaches a method of manipulating and editing a temporal order of an image (manipulating the play order of at least one image frame relative to another, see col. 6 ll. 8-15). Randomly accessing points in a video qualifies as such because the user is accessing images in a different order than they would otherwise be played. If the target frame (see col. 11 ll. 35-54; in this case, the target frame is P7) is not an I-frame, the routine follows the dependencies until it determines the closest I-frame (I1) which the target frame either directly or indirectly (i.e. frame P7 depends on frame P4, which depends on frame I1) depends on. The routine converts any P-frames in the line of dependency to I-frames until the target frame is ultimately converted to an I-frame ("For example, if a frame P7 which is to be transcoded is discovered to depend on frame P4 which in turn depends on frame I1, a nested transcoding subroutine is then called using frame P4 as the current frame and frame I1 as the reference frame, to convert frame P4 to independent frame I4. This process, indicated by a function block 251 of FIG. 6, is performed in as many nested loops as necessary to yield an I frame as reference frame for use with the P frame 241. In the hypothetical involving frames P7, P4 and I1, a dominant subroutine of the editor uses frame P7 as the current frame and frame I4 as the anchor frame, **to yield frame I7**."). Wee's frame conversion does occur until the target frame (P7) is converted into

an I-frame (I7). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of "receiving a random access request from a remote unit by a transmitting server; searching a random access point in a content file stored in the transmitting server in response to the transmitting server receiving the random access request; reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point", "searching an existing I-frame closest to the random access point when the random access point is determined to be a P-frame and is the data transmission starting point", and "configuring the media data sample having an I-frame as the data transmission starting point" of Agarwal and Lin with the method of "converting the P-frame into a new I-frame by calculating values of the existing I-frame and a next P-frame, performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a final new I- frame" of Wee for the benefit of gaining access to individual frames in fast-forward, rewind, editing, or splicing operations, thereby enhancing the viewers experience.

Neither Lin nor wee disclose "changing header information of the media data sample".

Aksu, an inventor from the same or a similar field teaches meta-data including sample type and size. In the case where a frame format is changed, this information must change; For example, the size of an I-frame is larger than

that of a P-frame or B-frame, and therefore the size field would change. This "sample-specific meta-data" can appear at the beginning of a file (i.e. as a header) (pg. 8 ll. 19-32). The header is transmitted along with the stream. It would have been obvious to one of ordinary skill in the at the time the invention was made to modify the method of "receiving a random access request from a remote unit by a transmitting server; searching a random access point in a content file stored in the transmitting server in response to the transmitting server receiving the random access request", "reconfiguring a data stream according to a screen type (frame type) of the random access point and a coincidence between the random access point and a data transmission starting point", "searching an existing I-frame closest to the random access point when the random access point is determined to be a P-frame and is the data transmission starting point", "converting the P-frame into a new I-frame by calculating values of the existing I-frame and a next P-frame, repeatedly performing the converting until the next P-frame is the random access point to convert the P-frame random access point into a final new I-frame", "configuring the media data sample having the final new I-frame as the data transmission starting point", "configuring the new data stream using the media data sample and the continuous data samples", and "transmitting the new data stream to the remote unit" of Agarwal, Lin, and Wee with the method of "changing a first header information of the new data stream" of Aksu because the fragmentation of a movie file shortens the length of time that a user has to wait before starting to view the streamed media

as opposed to a non fragmented MP4 file (see Aksu p.3 l1.11-22 and p.4 11.18-34).

Claim 34:

Aksu, an inventor from the same or a similar field, discloses MP4 file fragmentation in Fig. 5a where a File-level meta-data description part which appears at the beginning of streaming files as a header section must be received before any video is played back (see p. 5 ll. 8-11 and p 5 ll. 36-p. 6 l1.1). In random access play this file must be received (transmitted to a user from a server) in the header of the new data stream before any playback can begin. Therefore, the header information of the media data sample must be changed for proper playback.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASMINE STOKELY-COLLINS whose telephone number is (571) 270-3459. The examiner can normally be reached on M-Th 9:30-5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Koenig can be reached on (571) 272-7296. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jasmine Stokely-Collins/

Examiner, Art Unit 2423

/Andrew Y Koenig/
Supervisory Patent Examiner, Art Unit 2423